

## RELATIONS BETWEEN BOYS AND GIRLS BY APPLYING THE SCHOOL READINESS ASSESSMENT TEST FOR CHILDREN AT THE AGE OF 5

*Original scientific paper*

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### **Abstract**

*The subject of this research is to study the relation between boys and girls by applying the school readiness assessment test for children at the age of 5 in the kindergartens in Shtip. The primary aim of the research is to determine the relations between the achieved psychological results before the children are enrolled in school. The analyzed sample is defined as respondents at preschool from two kindergartens in Shtip (Vera Ciriviri-Trena and Astibo). The total number of respondents is 117, of which 57 boys and 60 girls. The children were from 5 to 5,5 years old during the research and were completely healthy. The school readiness assessment test is a dependable psychological measurement instrument and it contains five subtests. The three subtests (Perception test, Trail making test and Cross-out test) evaluate the specific abilities of children, while the two other subtests (Recognition test and Numerical test) are constructed to determine the general knowledge of the children. Data were analyzed using descriptive statistic parameters, factor analyses and *t* – test. In accordance to the obtained results, it is noticeable that the girls have better results than the boys in all of the school readiness subtests. According to the values where the structure of the only important canonical and discriminative function is presented, it can be noticed that the higher results are in the test for connecting dots, the cross-out test, the perception test and the numerical test. The values of the groups' centroids clearly show that generally, the girls have better results in the psychological part.*

**Keywords:** *preschool age children, school readiness assessment test, psychological and pedagogical tests*

### **INTRODUCTION**

The period before preschool is a specific period that positively influences the child's development. One of the basic conditions for correctly working with preschool children is to work following the characteristics of the growth and development in children at that age and their personal characteristics and abilities (Jakimovski, 2013). Various research shows that children that are actively involved in sports, learn faster and have better grades (Cragg & Cameron, 2006). Also, active exercises at a young age prevent different chronic diseases (Warburton, Nicol & Bredin, 2006). The results that Jakimovski, Sukova-Stojmanovska & Georgiev (2018) obtained from a regressive analysis, have shown that there is statistically significant prediction among the five most valis motoric tests, while in the tests for school readiness it is present solely in the numeric test. The research conducted by Jakimovski, Aleksovska- Velickovska, Gontarev & Georgiev (2019) that refers to the anthropometric and motoric dimension on one hand and the school readiness test, on the other hand, has shown the influence on the tests (trail making test, recognition test and numeric test) through a regressive analysis in a combined space.

The term school readiness embodies a few models which are the following: physical, socio-economic, pedagogical, and psychological and cognitive readiness. Physical readiness means the ability to sit still during the teaching process, as well as the ability to perform activities by the children that have strength such as carrying the school bag. Besides the physical readiness, the children have to have a developed socio-economic readiness such as collaboration and communication with other children, acceptance of rules, proper control of the emotions and preparedness to separate from the parents.

The term cognitive readiness for school means being prepared to study and have the motivation for studying. The first attempts to determine school readiness date back to the beginning of the last century. Gesell & Amatruda (1941) have developed a test that measures psycho-motoric development. Furthermore, based on the obtained results, they established development norms for motoric, adaptive and social behaviour and speech with the chronological age. Also, they have introduced a new term called 'age development' so that it

differ the chronological age in the different levels of development.

One of the first who has constructed a group test is Tolcic (1986), whose test contained two forms for an individual assessment and an assessment on numerous respondents. Some of the researchers believe that everyone should be included in the assessment of the achieved results in children's development and that physical development should be part of it as well (Gardner, Kornhaber & Wake 1999). On the other hand, others believe that the emphasis should be on determining the psychological maturity of children before they enter preschool (Marcon, 2002).

It is of great importance to determine the initial and the final level of connotative and cognitive abilities, to plan, predict and valorise the effects of the programs realized in the kindergartens. The evaluation of the psychological status means to determine the quantitative and qualitative level of the pedagogical and psychological abilities. The basic aim of this research is to determine the relationship among the boys and the girls by applying the school readiness assessment test on children at the age of five in the kindergartens in Shtip. The primary aim of the research is to determine the relationship between the achieved psychological results before the children are enrolled in school.

### **METHODS**

The respondents' sample is defined as preschool respondents from the two kindergartens in Shtip (Vera Ciriviri – Trena and Astibo). The total number of respondents is 117 of which 57 boys and 60 girls. All of the children that were involved in the research had to meet certain criteria. The children were between 60 and 66 months old (from 5 to 5,5 years) during the research and were completely healthy. During the realization of the election process, all of the following was taken into consideration: the total number of the preschool children, the preparedness of the kindergartens and the parents to allow the measurements, the availability of appropriate facilities in the kindergartens needed for the realization of the planned measurements, the willingness of the staff for collaboration and the possibility for an uninterrupted measurement realization.

The school readiness assessment test is a dependable psycho-

logical measuring instrument constructed by Vlahović-Štetić, Vizek-Vidović, Arambašić & Miharija (1995) and it contains five subtests:

- Perception Test
- Trail Making Test
- Recognition Test
- Cross-out Test
- Numerical Test

The three subtests (Perception test, Trail making test and Cross-out test) evaluate the specific abilities of children, while the two other subtests (Recognition test and Numerical test) are constructed to determine the general knowledge of the children.

The obtained data from the school readiness test for the sample of respondents at the age of five were analysed by applying the appropriate mathematical and statistical methods. Herein, the basic descriptive statistical parameters have been calculated. To determine the latent structure in the system of the five subtests of the school readiness test for children at the age of five, factor analysis was applied separately for boys and girls. T-test of large independent samples was applied separately for boys and girls, to determine the differences among them. The differences between boys and girls in the latent space were determined by an applied canonical discriminative analysis.

## RESULTS AND DISCUSSION

In Table 1. are presented the results of the tested difference among the arithmetic means of the boys and the girls in the school readiness tests. It can be noted that the girls have better results than the boys in all the tests. The statistical difference is important solely in the second and the fourth test of the girls.

Table 1. Frequency of students by school

	No	Sex	Mean	Std. Dev	T	df	Sig.																																												
PT	57	Male	9,77	3,571	-1,155	115	,251																																												
	60	Female	10,52	3,397				TMT	57	Male	5,05	2,709	-2,499	115	,014	60	Female	6,30	2,689	RT	57	Male	9,54	2,260	-,679	115	,498	60	Female	9,83	2,345	CT	57	Male	4,98	2,453	-2,217	115	,029	60	Female	6,05	2,752	NT	57	Male	5,32	3,095	-,921	115	,359
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Table 2: Discriminative analysis between the boys and the girls in the psychological tests

	Eigenvalue	Canonical R	Wilks' Lambda	Chi-Sqr.	df	p-level
1	0,08	0,27	0,93	8,57	5,00	0,13

Table 3. Structure of the canonical and discriminative function

Tests	Root 1
PT	0,38
TMT	0,83
RT	0,23
CT	0,73
NT	0,31

Table 4. Centroids of the groups (Means of Canonical Variables)

Groups	Root 1
Males	-0,29
Females	0,27

In Table 2. is presented the discriminative analysis between the boys and the girls, and it shows that one characteristic square with a value of 0.08 has been isolated, and that the obtained values of canonical correlation with the value of 0.27 and Wilkinson's lambda with a value of 0.93 that are not statistically important. It can be concluded that the difference between the boys and the girls in the five applied psychological school readiness tests is not statistically important.

According to the values in Table 3., where is presented the structure of the single important canonical and discriminative function, it can be noted that higher projections have the second, the fourth, the first and the fifth psychological test for school readiness or i.e. the trail making test (TMT), the cross-out test (CT), the perception test (PT) and the numerical test (T).

The derived values in Table 4. for the centroids of the groups clearly show that generally, the girls have achieved better results than the boys in the psychological part. The value of the girls' centroid is positive with 0.27 in contrast to the negative value of the boys' centroid of -0.29.

## CONCLUSION

The basic aim of this research referred to analyse the relationship between the boys and the girls by applying the school readiness test assessment for children at the age of 5 in the kindergartens in Shtip. The analysis on the differences of the psychological space between the boys and the girls at the age of 5 before enrolling in a school show that there is a difference which is the better results of the girls in almost all of the tests. Similar research was conducted by Horvat & Sindik, 2016 where the relations between the morphological dimensions and the school readiness test are statistically important, but in the relations between the psychological and pedagogical test with motoric abilities, there is not a statistically significant difference. The research that was realized with the school readiness test assessment will contribute to the process of determining the psychological and pedagogical tests for school readiness and the relations among them. The applied tests have shown satisfactory characteristics and can be used for determining the level of psychological and pedagogical abilities as well as the general knowledge that children possess before school enrolment. The obtained results can be practically used in the educational institutions (kindergartens, preschool education) for planning the curriculum, and all the activities from how to realize the lessons to the psychological and pedagogical aspect of the assessment and the general knowledge of pre-schoolers. This is especially important for the production, verification and innovation of the teaching plans and curriculum in the kindergartens. Following the results of the research, the relations and the differences between the boys and the girls at the age of 5 can be used as a basis for innovation and intensification of the curriculum and to herein create a basis for future development. As other research papers, the results of this paper can be also used practically if it is applied in everyday practice.

## REFERENCES

- Cragg, S., Cameron, C. (2006). Physical activity of Canadian youth - An analysis of 2002 health behaviour in school-aged children data. Ottawa ON: Canadian Fitness and Lifestyle Research Institute,
- Gardner, H., Kornhaber, M.L., & Wake, K.W. (1999). Inteligencija - različita gledišta. [Intelligence - different points of view. In Croatian] Jastrebarsko: Naklada Slap
- Gesell, A., & Amatruda. C. (1941). Development diagnosis: Normal and abnormal children development. New York: Haper & Row
- Horvat, V., Babic, V., & Miholic, J. (2013). Gender differences in some motoric abilities of preschool children. Croatian Journal of Education, 15(4), 959-980.

- Horvat, V. & Sindik, J. (2016). Associations between morphological characteristics, motor abilities and preparedness for school in preschool girls. *Croatian Journal of Education*, 18(4), 1173-1200.
- Јакимовски, М. (2013). Релации помеѓу моторичките способности и тестот за подготвеност на училиште кај деца од 5-годишна возраст. [Relationships between motor skills and the school readiness test in 5-year-olds. In Macedonian] Магистерски труд, Скопје: Факултет за физичка култура.
- Jakimovski, M., Sukova-Stojmanovska, D. & Georgiev, G. (2018). Relation of some motoric abilities with readiness to school test with girls aged five. *Research in Physical Education, Sport and Health*, 7(1), 95-101.
- Jakimovski, M., Aleksovska-Velickovska, L., Gontarev, S. & Georgiev, G. (2019). Relation of morphological and motor dimensions with the school readiness test in 5-year-old male children. *Research in Physical Education, Sport and Health*, 8(1), 69-75.
- Marcon, R.A. (2002). Moving up the Grades: Relationship between Preschool Model and Later School Success. *Early Childhood Research & Practice*, 4(1), 1 – 24. Retrieved 15 June, 2019 from <http://ecrp.uiuc.edu/v4n1/index.html>.
- Tolčić, I. (1986). POŠ - test za ispitivanje spremnosti djece za školu, Priručnik. [POŠ - test for examining children's readiness for school, Manual. In Slovenian.] Ljubljana: Zavod SRS za produktivnost dela.
- Vlahović-Štetić V., Vizek-Vidović, V., Arambašić, L., & Miharija, Ž. (1995) Priručnik za Test spremnosti za školu. [School Readiness Test Handbook. In Croatian] Jastrebarsko: Naklada Slap, pp: 48.
- Warburton, D. E., Nicol, C. W., & Bredin, S. S. (2006). Health benefits of physical activity: the evidence. *Canadian Medical Association Journal*, 174(6), 801-809.

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